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MONTHLY JOURNAL OF
THE MUSHROOM GROWERS'
ASSOCIATION

MGA
BULLETIN

APRIL, 1959 · NUMBER 112

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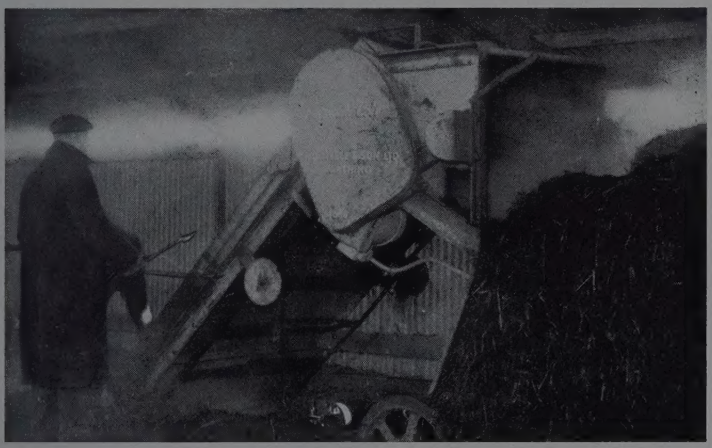

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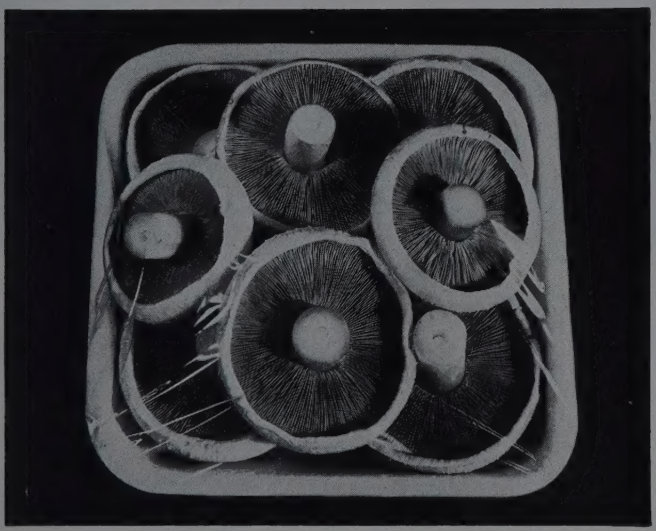

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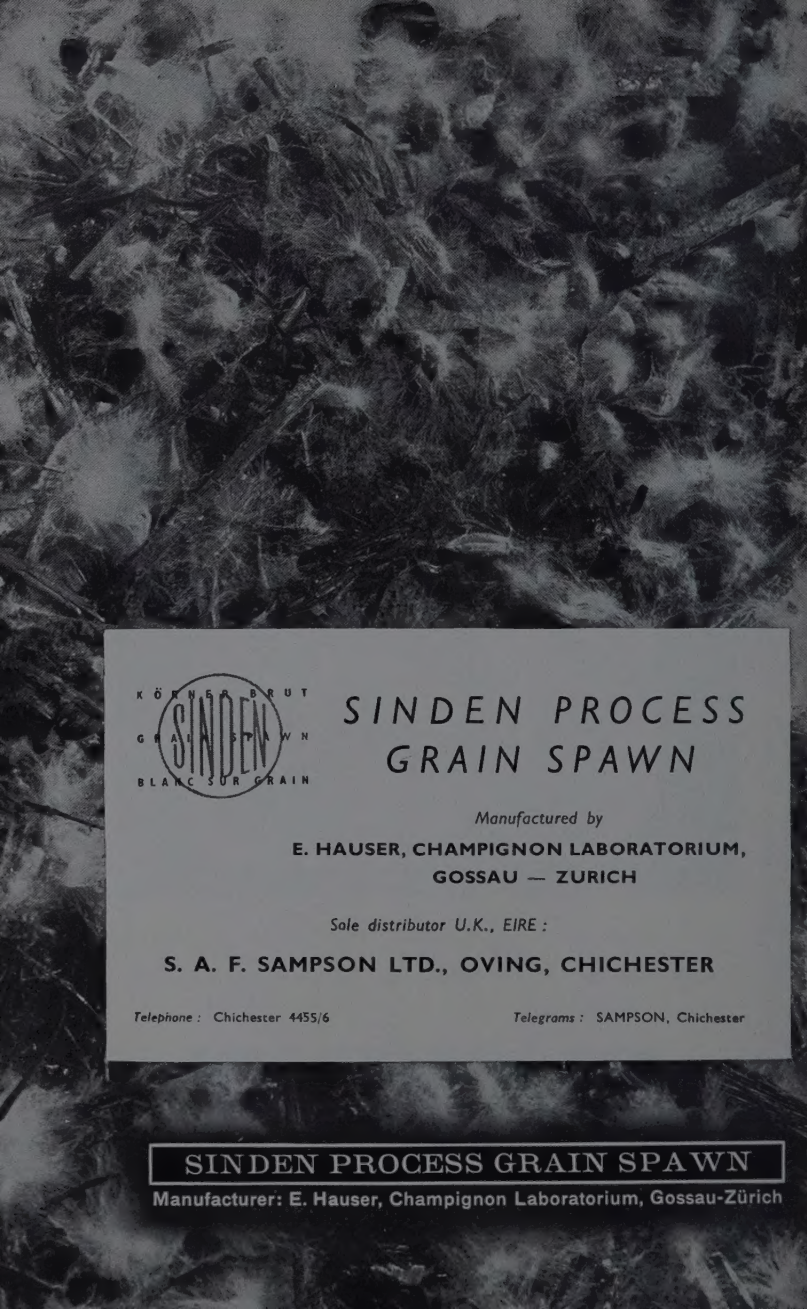

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APRIL - 1959
NUMBER 112

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EDITORIAL

IT JUST DOESN'T MAKE SENSE

Whatever may or may not happen in the future there is little doubt that the challenge to our mushroom market from the Dutch is at hand, and for the time being anyway, this challenge will have to be met unaided by any increased protection.

The painful truth of the matter is that the Dutch have offered to supply certain canners in this country at 3d. per lb. less than the price being paid to some of our own larger growers. At this time of the year the tariff in operation is 20% of the average price return to the U.K. growers—now around the 3/6d. mark—so the Dutch, in order to export to this country, have to overcome a tariff of about 8d. per lb. Carriage costs would be in the nature of 3d. making a total of 11d. This figure, plus the undercutting of 3d., makes a total of 1/2d. per lb. The stark fact which emerges from this is that the Dutch are prepared to overcome this hurdle of 1/2d. a lb. and market their produce on our very doorstep.

It remains to be seen whether they can maintain this challenge but certain it is that United Kingdom growers have to meet it—there is no escape.

How is it that the Dutch are able to sell mushrooms at what is virtually 2/- a lb. and still make a profit? Or are they in fact prepared to undercut at all costs in order to secure a footing in this country?

Reliable information has it that, in the main, the Dutch mushroom farms are part of a larger farming unit and amount to an average of only 4,000 sq. ft. per farm. How are they able, with small units scattered here and there, to get together on what would seem to be a common marketing policy? The answer may lie in co-operation and indeed it is said that over 300 Dutch mushroom growers have already formed themselves into a Co-operative. But a Co-operative, however well organised and supported, would hardly be able to overcome successfully a $33\frac{1}{3}\%$ marketing disadvantage, for that, in effect, is what the figure

of 1/2d. really represents.

It all seems a little odd and it just doesn't make sense but it is comforting to know that what the Dutch can do the U.K. growers can do if they really get down to it. And getting down to it is just what will have to be done. WRA

PUBLICITY CALYPSO

Let's pull Publicity from the file
In true Calypsonian style,
And take our cue from producers of milk,
Rayon, Nylon, Plastics and Silk;
In milk alone we're shown the way
In " Drinka pinta milka day ".
Its sales shot up with multiplicity
A ripe reward for mass publicity.
To help demand clear gluts so heavy
(While growers assist them through Spawn Levy)
Our Publicity Committee, being not nocturnal,
Are splashing 'Rooms in every journal;
And acting diligently like School Inspectors
Are our servants the Levy Collectors.
So into the corners with brushes and brooms
To polish up some quips on 'Rooms;
Morning Mushrooms Make a Meal—
Wipe or wash but never Peel:
Dine with zeal and zets, to zoom
Feeling airborne after mushroom:
Much vitamin " B " you will consume
If every dish includes mushroom:
Eat them each day as a Golden Rule,
The Edible Cultivated ' Paddock-stool ':
Oh, may such couplets soon be seen
Across the Midland's T.V. Screen. F.P.

GCRI OPEN DAY

Open Day at the Glasshouse Crops Research Institute, Littlehampton, will this year take place on Wednesday, 10th June. Further information will be given at a later date.

Whilst the main object of this Open Day is to give the GCRI subscribers and guests an opportunity of seeing something of the work done, others interested in glasshouse crops, and mushrooms, are cordially invited to attend.

Intending visitors who require refreshments should inform the Secretary of the Institute by the middle of May and apply for the necessary tickets.

A Press Conference will be held on 29th May.

*CONTROL OF MUSHROOM DISEASES BY SANITATION AND CULTURAL PRACTICES

†Dr. L. R. Kneebone

Sometimes mushroom growers are mystified or frustrated and they despair of the ever-present danger of diseases on their crops. Perhaps some comfort and understanding can result from the realization that every form of life has its natural enemies and the mushroom is no exception. The jingle—" Big dogs and little dogs have fleas, upon their backs to bite them, and big fleas have little fleas, and so ad infinitum"—is unfortunately very true. The micro-organisms which cause disease on the cultivated mushroom are not new creations; they have existed for thousands of years on wild mushrooms, plant debris and in soils. It is up to the mushroom grower to confine these organisms to their natural habitats or restrict them in their invasions into the commercial mushroom crop.

Classification of mushroom diseases

Mushroom diseases or the micro-organisms causing the disease can be classified in a number of ways including source of the pathogen, e.g., soil, air, compost, water, insects, etc.; location of the infection, e.g., mushroom tissue, compost, soil, compost and soil, etc.; method of effective control, e.g., spray, dust, drench, steam, etc.; or the physiological relationship to the crop. This last system of classification may have the most merit since it helps us to comprehend better the reasons for the presence or spread of the disease. Accordingly, mushroom diseases may be caused by organisms behaving as facultative parasites, indicator moulds or competitive weed moulds. The facultative parasites are associated directly with mushroom tissue at one stage or another and tend to increase during the crop, e.g., bacterial spot, brown spot, bubble, and the mildews. Indicator moulds are present primarily because of some environmental or nutritional condition unfavourable to the mushroom and these usually diminish during the crop, e.g., olive-green mould, ink caps, and plaster moulds. Finally, the competitive weed moulds prefer nearly the same conditions as the mushroom and may be helped by the presence of spawn. These build up during the crop and from one crop to the next. Examples are mat, lipstick, and truffle.

Principles of plant disease control

There are, generally speaking, four primary methods or principles of plant disease control. These are breeding, exclusion, protection and eradication. Thus far there is no hopeful evidence for incorporating disease resistance into a mushroom strain by **breeding. Exclusion** can be practiced nationally by the enforcement of quarantine laws. To a lesser extent isolated mushroom growing operations can remain free of certain diseases provided care is exercised to prevent the introduction of contaminated materials. Trenching a mummied bed to prevent spread is an example of local exclusion. Whereas it is worthwhile

*Paper given at First Mushroom Industry Short Course, Penn. State University 1956.

†Assoc. Prof. of Botany and Plant Pathology, in charge of Mushroom Research at Pennsylvania State University.

to attempt to exclude a disease from a given house in a plant or from a given plant in a mushroom growing area, it is often unsuccessful and one of the last two principles must be applied.

Protection implies the application of a chemical agent as a barrier to the spread of a pathogen already present. Examples of this are the use of zineb dusts on the producing beds or the use of preservatives on the woodwork of a mushroom house.

The last principle of disease control and the one most frequently resorted to in the mushroom industry is **eradication.** Eradication implies the elimination of an existent pathogen. This may be accomplished by the use of chemical drenches or eradicants such as chlorine, dinitro-ortho-cresol, or polychlorophenols; by heat in cook-out, soil steaming, or steaming of spent houses; by fumigants such as chloropicrin, formaldehyde, or methyl bromide; or by removal as in trashing or general plant clean-up.

Step-by-step precautions during the crop

Here are presented chronologically, in brief outline form, precautions that should be observed in minimizing disease.

1. *Avoid contamination of compost ingredients.*
   (*a*) Provide drainage away from storage pile rather than into it since the run-off or surface water could carry harmful spores from adjacent soils.
   (*b*) Control insects around storage manure since insects are known to disseminate spores.
   (*c*) Avoid the use of very old, short, wet manure.
   (*d*) Check delivery system to be sure that contaminated spent compost has not been hauled in the same vehicle.
   (*e*) The protection of the storage pile from airborne contaminants is largely impracticable.
2. *Type and care of the composting wharf.*
   (*a*) The composting wharf or yard should be paved.
   (*b*) It should be located on a well-drained site with an interceptor trench surrounding it to prevent drainage into the piles.
   (*c*) Periodic use of a good eradicant fungicide.
3. *The composting operation itself.*
   (*a*) Avoid incorporating soil with the compost.
   (*b*) Encourage active piles in which a maximum of the compost is 130° F. or above.
   (*c*) Cooler parts of the pile should be turned inward for better composting. The resulting high temperatures assist in eradicating stationary pests.
4. *Filling.*
   (*a*) Do not fill the obvious green, coarse and undercomposted masses.
   (*b*) Break up clumps of compost for better aeration.
   (*c*) The more short and compact the compost the less tamping

should be done and the lower should be the moisture content.

(*d*) Thoroughly clean up the floor and walkways.

5. *Pasteurization.*
   (*a*) For purposes of eradicating pests, a temperature of at least 140° F. for at least 6 hrs. is required throughout every cubic inch of bed.
   (*b*) Overheating without proper tapering off or without adequate oxygen predisposes the compost to certain moulds, especially the olive-green.

6. *Spawn run.*
   (*a*) Keep the houses closed as much as possible since the surface of the beds are very susceptible to certain pathogens at this time. Fortunately not much ventilation is required during spawn run.
   (*b*) Good insect control will prevent spores being brought into the house by these carriers.

7. *Treatment of casing soil to eliminate viable spores.*
   (*a*) Steam at 180° F. for 20 minutes at 110 pounds pressure, plus the residual effects of prolonged high temperature while the soil is stored before use, is effective.
   (*b*) Steam plus formaldehyde at the rate of one pint per cubic yard injected into the steam line during the last five minutes of steaming is even more effective.
   (*c*) Since some soils are reputed to be damaged by steam, fumigation with chloropicrin, methyl bromide or other proven fumigant can be used.
   (*d*) After treatment the soil should be stored on a disinfected surface and covered for a period of time sufficient to receive residual benefits, usually 1-2 weeks.

8. *Management of beds.*
   (*a*) Most of the diseases producing blemishes of the mushroom require a moist surface for infection, therefore ventilation and sometimes temperature should be increased to dry the surfaces of mushrooms after watering.
   (*b*) More frequent light waterings are better for most soils than fewer heavy waterings.
   (*c*) Unproductive sections of the bed should be checked early to determine the cause.
   (*d*) First signs of a disease should be dealt with immediately by trashing and disposal or chemical eradication before spread can occur.
   (*e*) Chemical control by using 150 ppm of chlorine in the water and the use of 15% zineb dust 2-3 times weekly at the rate of $\frac{1}{4}$ lb. per 1,000 sq. ft.
   (*f*) Insect control will lessen spread of surface disease.
   (*g*) Temperatures of 55-60° F. are less conducive to most mushroom diseases than are temperatures above 60° F.

9. *Cleanout.*
   (*a*) If a check of the beds after cropping reveals considerable disease, the house should be steamed for at least one hour at at least 140° F. plus formaldehyde at the rate of ½—1 gal. per 1,000 sq. ft. of bed. If this treatment does not kill all pests it will moisten the beds to minimize airborne spread during emptying.
   (*b*) Surface watering to moisten the whole mass is largely ineffective since water cannot thoroughly penetrate the compost.
   (*c*) Spent compost should be removed from the premises to such a distance as would make transmission back into the house unlikely either by wind or insects.
   (*d*) The empty house should be thoroughly cleaned of debris.
10. *Outside cleanliness.*
   (*a*) Frequently the outside environs are overlooked in preference to cleanliness indoors but this is not wise since spent compost, contaminated ground, weeds and brush can all harbor pathogens which may later gain entrance to the house.
   (*b*) Rake and burn organic debris.
   (*c*) Use good eradicant fungicide once or twice during the crop on all paved or travelled surfaces.

In summary, constant vigilance and applied knowledge of the life cycles of mushroom pathogens are likely to be rewarded by disease-free crops. Half-hearted measures will invite trouble.

MUSHROOM PUBLICITY AND THE HOUSEWIFE

Mushrooms, growing and cooking, were on show before hundreds of cookery conscious housewives at a recent two day cookery demonstration and exhibition organised by the National Farmers' Union at Luton (Bedford).

The MGA had been asked, along with various marketing boards, to take part in this by providing a stand, cookery leaflets and recipes for the demonstrator, Miss Doreen Davies, a well-known television personality, to use. Miss Davies gave some good mushroom publicity, cooking mushroom soup, mushroom omelets and a special party snack with mushrooms. She also used grilled mushrooms to decorate several savoury dishes. During her four demonstrations she underlined that the cultivated mushroom need not be peeled.

Great interest was shown by the audience in the stands which were at the back of the hall. This Association supplied its own stand piled with leaflets which were taken by crowds of women interested in mushroom cookery. The stand was decorated with freshly picked mushrooms. Many of the housewives were attracted by their freshness saying that they could never get them in that condition from the shops.

A short mushroom quiz of six simple questions about mushroom

MORE MUSHROOMS PER SQUARE FOOT!

January 2nd, 1959

The house in question was planted on August 27th, and the first pick was on September 29th. The house is of 1,030 sq. ft.

In eleven weeks from the first pick it had produced 5,261 lbs. or 5·10 lbs. sq. ft., and as we wished to avoid composting over the Christmas period, it was allowed to run a fortnight longer than usual whereupon the ultimate figures were 5,775 lbs., or 5·60 lbs. sq. ft.

It is possible that these figures (which include stalks) may not be believed by some but I assure you that they are quite accurate and truthful, and you are welcome to examine my records if you wish.

In support of the above, the figures of the remaining five houses (all planted with 100% Spawn) which are in crop at the moment, are as follows:-

11	weeks	- 3·93	lbs.	sq. ft.
9	"	- 3·64	"	" "
7	"	- 3·24	"	" "
2	"	- 1·92	"	" "
1	"	- ·81	"	" "

The Original letter can be inspected at our Head Office in Worthing

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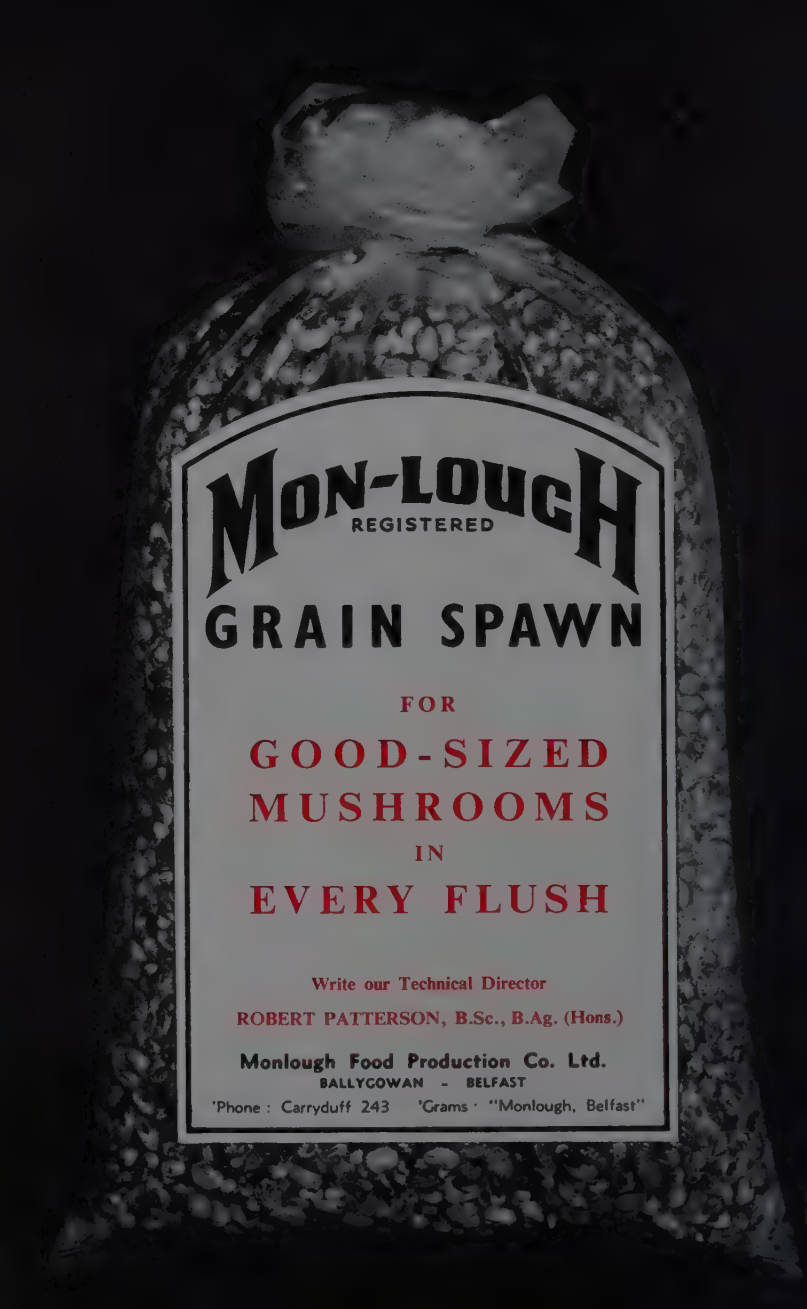
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cookery and growing, seemed popular all round. A prize of a blue and white mushroom apron and a pre-pack of mushrooms was given to the winner at each session. Other pre-packs of mushrooms were given as prizes in the lucky draw.

The organiser of the demonstrations, Mr. H. D. Ridley (NFU Regional Publicity Officer) estimated that about 2,000 people came into the hall during the two days. For many of them it was the first time they had ever been taught anything about the art of mushroom cookery.

MUSHROOM PUBLICITY AT SELFRIDGES

Mushroom sales at Selfridges—one of London's largest stores—shot up by over 100% during the special Mushroom Week organised there by the MGA last month.

Mr. J. Temple, the store food sales manager, said that he was very pleased with this result and hoped another such week could be held very soon.

The week, which coincided with Selfridge's Gold Jubilee, started on 16th March and ended on the 26th. One of the food store windows showed two trays of growing mushrooms provided by Mr. A. J. Berry, Chairman of the MGA Publicity Committee, while another display of trays had been arranged in the store itself.

LAST MONTH'S PUBLICITY CONTRIBUTIONS

	£	s.	d.
Salesmen:			
J. Collingridge Ltd., Covent Garden Market, W.C.2	25	0	0
***Spawn Merchants:**			
Monlough Food Production Co., Ltd., Ballygowan, Belfast.			
White Queen Ltd., Yaxley, Peterborough.			
S. A. F. Sampson Ltd., Oving, Chichester.			

*Amounts collected by Spawn Merchants are not for publication.

WHOOPS! SOMETHING NEW IN LADIES HATS

WASHED MUSHROOMS NOW

4d. per lb. Margin Over Costs Obtained

A washing system for mushrooms by means of which, it is claimed, a premium of 6d. per lb. has been gained over a considerable period, marketing through normal channels, was demonstrated at the Wrington Vale Nurseries, Congresbury, Somerset, on Tuesday, 3rd March.

The demonstration was part of a farm walk programme and there was an attendance of about 130 MGA members who were welcomed by Mr. Graham Griffiths, who commenced mushroom production at Wrington Vale on his own account in 1946, and who, with 126,000 sq. ft. of beds under the tray system, is one of the largest growers in England.

The washing in process. On the left is C. G. Stocking (South Luffenham), with S. J. Pointing (Bath) and Mr. Barrett (J. E. R. Simons Ltd., Harlow) on the extreme right.

Mr. Frank Bleazard, MGA Chairman, introduced Mr. Griffiths, who has been a member of the MGA Executive for the past year or two. Mr. Griffiths explained the farm set up and introduced Dr. M. J. Reider of Reading, Pennsylvania, a Consulting Chemist of M. J. Reider Associates, who together with Mr. R. J. Annaballi of Temple, Pennsylvania, was responsible for introducing and developing the Ronjonite system.

Dr. Reider said:—

The Washing Procedure

There are two solutions used in this process for washing the mushrooms.

The first does the heavy work cleaning off the soil, compost, insecticides, lime or some of the hypochlorites which get on the mushrooms and tend to hasten the decomposition and give them a shorter life. These materials must be used in the first place to make them grow but they can be removed by washing.

So that the solution might not penetrate the mushrooms, we run the temperature of the bath higher than the temperature of the mushrooms. The baths here are about 64° at the start because we want the cellular contents of the mushroom to warm up slightly and expand, so that there is a flow outwards which stops the water carrying the dirt getting into the mushrooms.

We then remove the water by means of a perforated seive and transfer the mushrooms to the second tank for about 1½ minutes where we have another solution which cleans the mushrooms even further.

It also prevents the rapid effects of the oxygen on the mushroom, which tends to turn them brown.

The second tank is colder than the temperature of the mushrooms and we throw in ice trying to get the temperature as low as we possibly can. There is a ready movement of the solution into the pores of the mushroom and they can be made wet much easier when the temperature is cold.

Examining the finished product. L. to r.: A. J. Berry (Ruislip), W. A. Dawson (Wrington Vale), F. C. Atkins (Yaxley), Dr. Reider (U.S.A.) and Raymond Thompson (Chichester).

After 1½ minutes in the second solution the mushrooms are taken out and allowed to drain and put into a drying room where they stay for about 1 hour. In this time all the surface water is removed.

We cannot emphasise too strongly the importance of having a firm and solid mushroom.

We cannot up-grade the body of the mushrooms; we are bound by the quality of what you give us to wash. But we can give you a better colour and cleaner mushrooms and make the life of the mushroom longer by about 24 hours in the markets.

It is obvious, in this picture, which mushrooms have been washed.

The other big advantage we find is that the washed mushroom is getting a better price in the markets. We have been unable to supply the demand for washed mushrooms in our area. We find that we can sell the washed mushrooms right out of the market before the unwashed mushrooms are nearly gone.

Today we are washing about 10 lb. of mushrooms at a time in one seive.

Using 10 sieves we wash about 100 lb. of mushrooms per hour.

With more sieves we could increase our output to almost 1,000 lb. a day. We do not wash cups or flats in our country as

there is no demand for them in the fresh markets. My experience has been with buttons. Mr. Dawson will be happy to answer any of your questions; he has had eight months experience of washing mushrooms in your country and has plenty of experience of the Ronjonite system in our country.

The washing process takes two minutes in all, 30 secs. with Solution "A" and ninety seconds with Solution "B". Output is limited by the number of washing seives in use and whilst, at the demonstration, this was limited to 300 lb. a day one man, with the requisite number of sieves, can throughput up to 1,000 lb. daily in eight hours. Drying off, at the moment, takes a hour under controlled conditions but it is expected that this period of time will be cut considerably with greater experience.

Dr. Reider said afterwards that 50% of the fresh mushrooms marketed in America were now washed and of these probably about 50% were washed with Ronjonite. Cost of materials for washing worked out at approximately 1d. per lb. with an all-in cost, including labour and grading, of not more than 2d. per lb.

This new product is being handled by Wrington Vale Pre-Packings Ltd., of which Mr. Graham Griffiths and Mr. W. A. Dawson, are the Directors.

Graham Griffiths in (duffle coat) enjoying a joke outside one of his growing houses—with a group of MGA members.

MUSHROOM GROWING—THE SIMONS' SERVICE

J. E. R. Simons, Ltd., well-known Distributors of MOUNT MUSHROOM SPAWN, inform us that they have been obliged to change their telephone numbers and that these are now HARLOW 222, 223 and 224.

Messrs. Simons have always made a feature of their service to the Grower, and in accordance with their custom of many years standing, these numbers are available after office hours. Incidentally, their telegraphic address remains **Simons, Harlow.**

Mushrooms Washed the RONJONITE Way

Command The Highest Prices!
Outsell Ordinary Mushrooms!

You never see mushrooms as clean and white as those washed in RONJONITE!

RONJONITE "A" PRE-WASH
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EACH AVAILABLE IN 5, 10, 15 AND 50 LB. LOTS

Lots under 50 lb. — £1 15. 0. per lb.
Special prices on lots of 50 lb. or over.

Details and prices of equipment gladly supplied on request

We invite you to visit us at our location, and will be pleased to answer any inquiries you may make about our Ronjonite products. Write or phone for descriptive folder.

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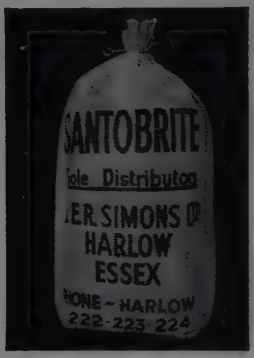
Ensures a CLEAN START and PRESERVES your TRAYS AND WOODWORK

How much do your Scales cost you per week ?
With mushrooms @ 3d. per oz. it could be £?00 per annum. Work it out — it may surprise you.



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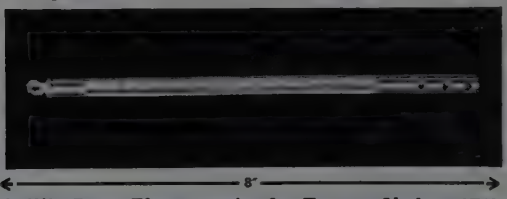

A neat little Brass Thermometer for Tray or Shelves 17/6 each

J. E. R. SIMONS LTD.

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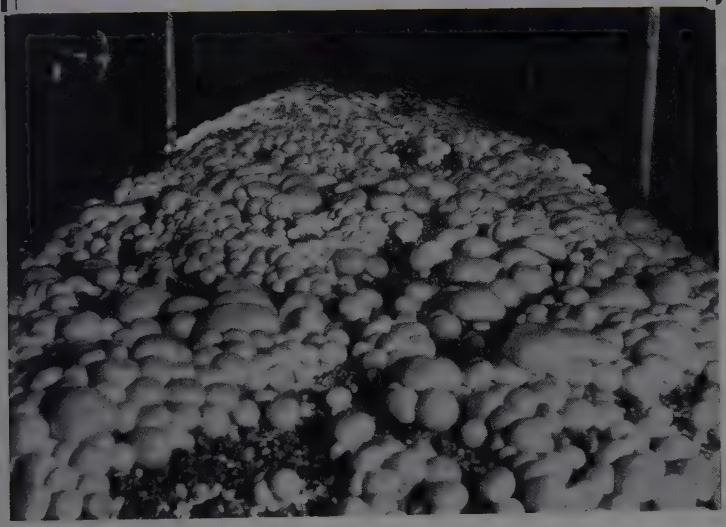

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Telephone : Harlow 222, 223 and 224

FRENCH MUSHROOM EXPORTS IN 1958

(Extracted from the French Federation Journal)

French exports of mushrooms and mushroom spawn in 1958, compared with those of 1957, have increased by about 7.6% in weight and 8.4% in money value.

Here are the figures which we have been given by the Minister of Finance:—

Weight Exported:

Mushroom spawn	96,300 kg.
Fresh mushrooms	140,700 kg.
Pickled mushrooms	10,100 kg.
Preserved (canned) mushrooms	6,508,000 kg.
TOTAL	6,756,000 kg.
TOTAL IN 1957	6,278,000 kg.

Income from Exports:

Mushroom spawn	32,249,000 F.
Fresh mushrooms	44,468,000 F.
Pickled mushrooms	4,947,000 F.
Preserved (canned) mushrooms	2,171,449,000 F.
TOTAL	2,253,113,000 F.
TOTAL IN 1957	2,078,433,057 F.

Mushroom Spawn:

Our spawn exports mark a new signpost in our progress. They have increased by 25%. Holland has bought 40,800 kg. of spawn compared with some 23,600 kg. which we sold last year.

The Italians have taken 15,700 kg. against 7,400 kg. last year and in Switzerland and Spain we are making a good progress with our spawn sales. But in Belgium our sales have dropped sharply from 14,300 kg. in 1957 to only 6,500 in 1958.

Finally Germany and Austria remain our smallest customers taking 1,200 kg. and 900 kg. respectively.

Fresh Mushrooms

In this market our sales abroad are marked by a slight but unusual decrease. The Belgians have increased their purchases from the 5,800 kg. of last year to 61,600 kg. in 1958, but our other customers are taking less French exported mushrooms.

Pickled Mushrooms

Although not very large, these exports are much greater proportionately than last year. Our principal buyers were Belgium, Germany and Italy.

Canned Mushrooms

The U.S.A. as always took the largest proportion of our canned mushrooms in 1958. In 1957 they bought 1,453,800 kg. but in 1958 this figure jumped to 1,755,200 kg. worth 577,766,000 F. compared with 477,290,000 F. in 1957.

Several other American countries have also increased their buying from France. These include Canada, Venezuela and Cuba. The British Colonies are also buying more. On the other hand there is a certain drop in Peru.

Germany is by far the best of our European customers taking 720,800 kg. against 426,900 kg. in 1957 followed by Sweden with a small increase. These help to fill the gap left by the decrease in exports to Switzerland.

There is a slight decrease in exports to Luxemburg and Great Britain. On the other hand Austria and Norway have increased their buying. In Africa our exports have generally decreased and the situation is the same in Asia with the exception of Siam.

The increase in our exports in 1958 compares favourably with the 1957 figures. The income from the former exports is about 10% higher.

Holland, who buys spawn practically only from France, is at present our strongest rival in the Common Market. Their sales in Belgium certainly explain the decrease in our exports to that country. Now Holland is also beginning to rival us in Germany where the demand for mushrooms is getting larger as is shown by the rise in their imports of our canned mushrooms.

The Italians continue to import very few mushrooms but are developing their own industry.

Our own sales in the Dollar Zones are increasing. On the other hand our sales in the Sterling Area and to our former colonies are dropping. The production of mushrooms is still increasing in Great Britain.

Reprinted from Hansard, 11th March, 1959 *HOUSE OF LORDS*

MUSHROOM IMPORTS FROM HOLLAND

Viscount Brentford: My Lords, I beg to ask the Question which stands in my name on the Order Paper.

(The Question was as follows: To ask Her Majesty's Government by what amount they are expecting the imports of mushrooms from Holland to rise this year, and, in view of the protection given by the Republic of Ireland and Germany to their home markets, what steps Her Majesty's Government propose to take to protect the interests of the mushroom producers in this country).

Earl Waldegrave: My Lords, in the last three years there have been only a few pounds—pounds, not tons—of mushrooms imported into the United Kingdom from Holland. I am unable to forecast what imports may come in this year or in the future. Mushroom producers in this country are protected by an import duty of 20 per cent. during the months of October to April and of 10 per cent. from May to September.

Viscount Brentford: My Lords, while thanking the noble Earl for that reply, may I ask him whether he appreciates that that protection is very much less than the protection afforded to the import of mushrooms into Ireland and Western Germany and whether he realises that Holland will have an exportable surplus of mushrooms of some 7½ million tons* this year?

Earl Waldegrave: My Lords, I do not think I can express an opinion on the tariff policy of the Irish Republic. I am aware that it is suggested that Holland may be going to have a surplus. I have seen forecasts that they may try to sell mushrooms in this country. The Dutch have established no trade in mushrooms here, however, and how much trade they may be able to get in any new export market is really anybody's guess.

*EDITOR'S NOTE: This should obviously be lb.

EIRE MUSHROOMS STILL INCREASING

Total figures of imports of mushrooms from the Republic of Ireland for 1958, show an increase of nearly 60 tons over the 1957 figures and the upward trend was continued throughout the year with the exception of two months—July and December. In December, 1957 (Bulletin No. 104, p. 332) Eire mushrooms came into this country to the extent of 1,172 cwts., a figure never before or since equalled but the price collapse in that month (returns were £11,369 for 1,172 cwts. against £10,737 for only 613 the previous month) gave a clear indication of what could happen if supply exceeded demand. In December, 1958, the Irish imports amounted to 656 cwts. which, with the exception of August, was the lowest figure for any month in that year. The price return to the Eire growers in 1958, was £174,460 against £146,401 in 1957.

Imports of mushrooms from France were negligible at 172 cwts. valued at £2,911.

IMPORTS OF MUSHROOMS FROM EIRE

	1954		1955		1956		1957		1958	
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
JAN.	691	12,009	485	I.R. Averaged	939	I.R. Averaged	686	11,889	993	15,673
FEB.	582	9,345	523	£17 4s. 0d. per cwt.	639	3.1s. per lb.	626	11,090	747	12,216
MAR.	613	10,856	572	or 3s. 0½d. (approx.)	890		596	10,680	982	17,214
APR.	402	6,975	743	per lb.	863		779	14,413	851	14,765
MAY	401	6,993	524		903		886	16,522	996	17,181
JUNE	598	10,193	630		796		810	13,468	951	16,767
JULY	486	8,602	657		699		871	12,853	853	15,165
AUG.	425	7,756	505		459		524	7,878	573	9,480
SEPT.	367	6,717	541		636		660	9,986	854	14,179
OCT.	625	11,927	498		966		932	15,556	1,035	16,799
NOV.	655	11,502	585		776		613	10,737	904	15,131
DEC.	458	7,733	709		473		1,172	11,369	656	10,399
TOTAL	6,303	110,608	6,972		9,039		9,172	146,441	10,371	174,969

TOTAL (1953) 6,189 Cwt. £114,965

You can make better compost more quickly and reliably-with

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SPECIAL MUSHROOM COMPOST ACTIVATOR GIVES HIGHER FERMENTATION TEMPERATURES, AND A FIRST CLASS COMPOST THAT ASSISTS THE SPAWN RUN

MANY ADVANTAGES are gained by using Adco "M" as an activator in composting. Chief among them is the higher temperature attained both in the compost heap and in the beds during the peak heating process. Look at the results that follow from these higher temperatures.

First of all, fermentation goes ahead at a faster rate. Composting takes less time and the finished product is ready earlier.

Secondly, you have greater assurance that your crop will be free of pests and disease. The higher temperature either kills off the pests inside the heap or drives them to the surface, where they can be dealt with by insecticides. High temperatures during fermentation are particularly vital in preventing disease such as Vert-de-gris, of which there is special danger when composting during the winter months.

More nourishment

If you use Racing Stable manure, or other manure in which excess straw is present, the use of Adco "M" is strongly advised. The fermentation of this type of manure takes place more rapidly and effectively when Adco "M" is added. You get a more thorough breakdown of the strawy material, which then becomes available as food for the growing spawn. So your compost provides more nourishment for the mushrooms, and you get a bigger crop.

Better spawn run

Adco "M" produces a good quality compost of even texture. It provides an ideal medium for spawn run and helps to avoid greasy conditions, lack of aeration, and over wet compost – all of which delay mycelium growth. The spawn is able to make more rapid use of the food provided. It establishes itself more quickly and this is again a great help in preventing diseases and weed fungi. The faster the spawn grows and fills the compost the less likelihood is there of disease and weed fungi becoming serious competitors. A quick spawn growth also gives a quicker ultimate production.

You can have freedom from uncertainty in the composting process – by using Adco "M". It will pay you hands down. Adco "M" is specially formulated as a result of years of experiment, for the specific purpose of making mushroom compost. It can be used for composting with straw alone, if you wish. Or it can be used to compensate for variations in the quality and texture of your manure supply. Adco "M" provides the way to better mushroom compost every time.

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WORLD'S PRESS DIGEST

Mushroom prices have improved slightly. *Grower*, February 7/59. The rather heavy consignments of mushrooms hardly moved. *Nurseryman Seedsman*, February 12/59. Mushrooms remain steady. *Grower*, February 14/59. Far too many mushrooms had arrived, requests for them being so small. *Nurseryman Seedsman*, February 19/59. Movement seems a little brisker. *Fruit Trades' Journal*, February 21/59. Mushrooms are meeting a slow trade this week. *Grower*, February 21/59. The large quantities of mushrooms arriving aroused little interest. *Nurseryman Seedsman*, February 26/59. A heavier quantity of mushrooms tends to slow down sales and prices have eased by roughly 6d. per lb. during the past two days. *Fruit Trades' Journal*, February 28/59.

Among an impressive range of spraying machines was the latest "Toxaver" *power duster* froom Coopler, Pegler & Co. Ltd., Burgess Hill, Sussex, with a Villiers mark 12 petrol engine. Fitted with a single outlet lance it will dust up to a horizontal distance of 52 ft.; a most efficient agitator and distributor make for uniform delivery and complete coverage.

Farm Implement and Machinery Review, February 1/59.

The already-known promotion of pileus formation in pure cultures of *Polyporus brumalis* by heightened evaporating conditions is shown to be associated with enhanced translocation rates into the fruit-body (as investigated by dyes). This does not result in changed proportions of dry matter or potassium in the tissues at the stipe apex, but accelerated growth (dry-weight basis) occurs in this region. Reduction of concentration of the medium (and hence probably of the concentration of the translocation stream) diminishes pileus production.

B. E. Plunkett in *Annals of Botany*, Vol. 22, No. 86, April/58.

"There is a tendency to use double the quantity of spawn per square foot", said Mr. Atkins, "and mushroom growers always seem to be building more houses".

Bryan D. Farthing in *Grower*, February 14/59.

St. Clare Engineering Ltd., of Bridge Road, Lymington, Hants., showed the "Solent" power screen for soil sifting, etc., by mushroom growers, market gardeners and nurserymen. *Farm Implement and Machinery Review*, February 2/59.

Tests completed last month on the performance of perforated polythene film as a packaging material for mushrooms compared it with cellulose film bags and with cellulose acetate coverings for moulded pulp trays. Conducted by the Produce Prepackaging Development Association in conjunction with a large grower, they showed nearly 50 per cent. less drying out and shrinkage in the polythene-packed produce.

Packaging News, February/59.

A new department is to be opened by the Glasshouse Crops Research Institute, Littlehampton. Mr. G. F. Sheard, director of Fairfield Experimental Station, Kirkham, Lancashire, will be in charge.

Great News for Mushroom Growers!

DITHANE DUST

TRADE MARK OF ROHM & HAAS COMPANY, PHILADELPHIA.

Controls deadly diseases

Dactylium (Cobweb) and **Mycogone (Bubble),** serious and prevalent mushroom diseases, are now being effectively controlled. P.B.I. Dithane Dust, containing 20% Dithane—the most widely used fungicidal material in the world—is increasingly employed for the successful control of these two deadly mushroom diseases, **and for the control of Verticillium and Red Geotrichum.** Safeguard your mushroom crops this season and every season with multi-purpose Dithane Dust.

And these Aerocides control Mushroom Flies.

BHC (Lindane) and Malathion.

Also from P.B.I., originators of the Aerocide Process, come two important Aerocides, providing the **most economical and efficient** control of mushroom flies. Ask for them by name—**P.B.I. Aerocide B.H.C. (Lindane) and Aerocide Malathion.** You can use them through the famous P.B.I. Aerocide Projector, Microsol Generator or Compressor/Spray Gun Outfit.

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AP 499

Growers will hear about the new development at the Institute's Open Day on 10th June. *Grower*, February 28/59.

Growers must face the fact that they bring many of the problems on themselves. They may be excellent mushroom growers, but they lack the good business sense that, in to-day's market conditions, is an absolute necessity for success. AMI's *Mushroom News*, February/59.

Additional funds from the Federal government are being sought for research into the improvement of artificial composts. The project will be directed by Dr. Edmund B. Lambert at the U.S. Department of Agriculture in Beltsville, Md. AMI's *Mushroom News*, February/59.

In the north-eastern part of Holland the straw is sold to private or co-operative paperboard factories, and most farmers there made from £10 to £15 per ton. The loss of straw involved in combining (approx. 12 cwt. per acre), and the fact that the factories do not accept combined straw, makes combining economically impossible.
H. M. Elema (Wageningen) in *Farm Implement and Machinery Review*, February 1/59.

From the old Malthouse at Nottington, Weymouth, 40,000 lb. of mushrooms are dispatched each year, mostly to the shops of South Dorset. The man who started the farm four years ago, Mr. W. Dunbar, has handed control of the firm over to Col. K. H. Lloyd-King, but is remaining as technical adviser. *Dorset Evening Echo*, February 26/59.

Good thermal insulation and clarity of vision under varying temperatures and humidities are advantages claimed for double-seal window units made by Multiglass Ltd. These are made to customers' sizes. *Scope*, February/59.

Co-operation is the obvious key to the future.
Grower, February 7/59.

" In the long run the aim of the Common Market is to achieve common agricultural policies. This means that gradually the Dutch producers will get more and more security for their outlets in neighbouring countries ", said Baron Bentick, the Ambassador to the Netherlands, Guest of Honour at the Importers' Association dinner.
Bill Sandford in *Fruit Trades' Journal*, February 21/59.

Five varieties of canned mushrooms are now being exported by A. G. Linfield Ltd., Thakeham, Sussex. Small shipments are already being sent to a number of overseas markets, including Africa, Malta and Gibraltar. " If the European Free Trade Area develops, Continental sales prospects are likely to be good", said Mr. T. L. Robertson, sales director of the company. *British Trade Journal*, January/59.

Mr. A. J. Barrett, one of the Lea Valley growers, showed the Minister of Agriculture his mushroom production in glasshouses. "Are there any problems?" asked Mr. Hare. "I should say so", replied Mr. Barrett. *Grower*, February 7/59.

Supplied in the form of a powder and a solution, Alcuma cement can be readily mixed to a soft putty-like consistency and easily applied. Composed of polyester resins combined with inert fillers, it sets to a close,

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stone hard texture that is uniformly resistant to acids, alkalis and water, not merely on its surface but throughout its entire mass. The materials are manufactured by J. H. Sankey & Son, Ltd., Refractories Works, Ilford, Essex. *Industrial Equipment News*, February/59.

The Potato Board is right to impose its top tax of £10 an acre on overplanting. We wish it could be £100. Anyone who overplants is cutting his own throat and those of his friends. *Grower*, February 14/59.

Philip Harben is to propose at the annual meeting of the Royal Horticultural Society " That as edible fruits and vegetables are grown for human consumption, the Council consider the advisability of instructing the judges of competitions that, in assessing the merits of fruits and vegetables, first consideration be given to the edible and (where applicable) the culinary qualities of the exhibits."
Nurseryman Seedsman, February 19/59.

Efficient heat distribution and air ventilation in glasshouses and bulb stores can be effected with the Nivola fan, distributed by Geo. Monro Ltd., Waltham Cross, Herts. Air is drawn from both the top and bottom of the house and distributed diagonally in a continuous air stream. The efficient movement of air and removal of excess moisture results in healthier growth. The fan is priced at £33.
Nurseryman Seedsman, February 19/59.

As a pupil on a market garden near London, where mushroom spawn bricks were made, I was told the process was a trade secret and instant dismissal would follow too close an inspection of the spawn shed. Since those days mushroom growers have started their own research centre. There is even a move to separate the best varieties and sell guaranteed spawn—five years at least after continental growers had succeeded in doing this very thing.
A. E. Haarer in *Commercial Grower*, February 20/59.

A British Standards Institution working party has been set up to examine standardisation of cheap containers for tomatoes and mushrooms. *West Sussex Gazette*, February 26/59.

The commercial mushroom, *Agaricus campestris*, was cultivated on fortified, composted gum wood sawdust. The yields on a weight basis were considerably higher than commercial yields from horse-manure compost. Yields on a per square foot basis were low, because of the low bulk density of the sawdust.
S. S. Block, G. Tsao and L. Han in *Journal of Agricultural and Food Chemistry*, Vol. 6, No. 12, December/58.

The days of that ambiguous horticultural word " strain " may be numbered. The suggestion to do away with it has been made on an international basis and, in this country, the idea has the support of the National Institute of Agricultural Botany. There is general agreement that " strain " is unnecessary and that where inherited differences can be found the term " variety " should be used.
Commercial Grower, February 20/59.

University of Delaware mushroom marketing research, sponsored

by AMI, promises to yield important innovations in handling equipment. Purpose of this research is to cut labour cost with high-speed completely automatic machinery for cutting and sizing pulled mushrooms. Mushrooms are loaded via a vibrating chute. A continuous flow of mushrooms is positioned in a V-trough with the aid of water jets. Round plastic belting picks up the mushrooms, carrying them through revolving knives which trim and separate the roots. Mushrooms are subsequently sized with gradual spreading of the plastic belts.

AMI's *Mushroom News*, February/59.

SEEN THIS ?

For the mushroom grower using fish boxes and conventional tray system methods the new Chatsworth manually operated Stillage Lift conversion for the Wrigley model 209 Motor Truck can be a great boon. With this machine eight filled boxes can be picked up from a support (usually four bricks), transported to a peak-heat house or growing shed and accurately placed in position on supports by one man entirely single handed. Reasonable gradients, narrow doorways and confined spaces present no obstacle. The overall width is 2′ 10″ and a front step affords the operator an alternative driving position and the means of adding his weight directly to the driving wheel to increase the grip at critical points. Replacement of the Stillage Lift by the tipping body takes only half a minute. This conversion of the Wrigley Truck is carried out by H. D. Steele & Son Limited, Railway Approach, Worthing. Price £160, complete with power unit, wooden tipping body and stillage.

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POLISH MUSHROOM PRODUCTION UP

The production of cultivated mushrooms in Poland has increased nearly eight times in the last six years. Figures published in the first issue of the Polish Mushroom Growers' Bulletin (*Biuletyn Producenta Pieczarek*) shows that production rose as follows:—1953, 80 tons; 1954, 156 tons; 1955, 210 tons; 1956, 326 tons; 1957, 408 tons; and 1958, 620 tons.

It is estimated that the total crop of edible fungi in Poland amounts to 10,000 tons per annum and fungi exports to America are valued at 500,000 dollars per year.

1959 PUBLICITY FUND CONTRIBUTORS

Dan Wuille & Co. Ltd., Covent Garden Market, W.C.2	100	0	0
Francis Nicholls Ltd., Smithfield Market, Birmingham	157	10	0
R. E. Jenkinson Ltd., Covent Garden Market, W.C.2..	105	0	0
Wm. Morgan & Co. Ltd., Salesmen, Custom House Street, Cardiff ..	10	10	0
Ernest White Ltd., Salesmen, Kirkgate Market, Leeds	5	0	0
C. W. Tooley & Son Ltd., Salesmen, Nottingham	2	2	0
Geo. Jackson & Co. Ltd., Smithfield Market, Birmingham	50	0	0
Ed. H. Lewis & Sons Ltd., Covent Garden Market, W.C.2	5	5	0
Wm. McGrattan & Sons Ltd., Smithfield Market, Manchester ..	5	5	0
G. W. Jackson (Cardiff) Ltd., 11 Custom House Street, Cardiff ..	10	10	0
†C. Snowdon & Co. Ltd., Castlefolds Market, Sheffield	7	17	6
E. Broadbelt Ltd., Smithfield Market, Manchester	15	15	0
Dan Wuille Ltd., 79 Candleriggs, Glasgow C.1..	25	0	0
Sundriesmen:—			
Bradford Fertilizer Co. Ltd., Whitefield Place, Girlington, Bradford	10	10	0

***Spawn Merchants:—**

†Monlough Food Production Co. Ltd., Ballygowan, Belfast.
†H. Mount & Sons Ltd., Littlebourne, Canterbury.

*Amounts collected by Spawn Merchants are not for publication.

†Previous contributions already acknowledged.

Salesmen:—	£	s.	d.
T. J. Poupart Ltd., Covent Garden, London, W.C.	115	0	0
Reuben Levy Ltd., 88 Spitalfields Market E.1	5	13	8
C. Snowdon & Co. Ltd., Castlefolds Market, Sheffield	4	13	0

OIL SUPPLIES

The MGA is making enquiries with regard to the possible purchase of bulk oil supplies and members are advised that, for the time being, it might be in their own interests not to make individual contracts for fuel oil.

The CULVERWELL Manure Turner

FOR MUSHROOM GROWERS

- PETROL *or* ELECTRIC
- EXTREMELY MOBILE
- £225 Ex Works

The small machine with the BIG turnover

Bruises and aerates–does not shred. CAN BE USED FOR ALL TURNINGS. 3 men handle 25/50 tons per day. Waters as it turns. Stacks up to 5 feet. By using the CULVERWELL MANURE TURNER throughout the whole composting process, the work is reduced to the minimum, time taken is shorter with improved results.

Will pass through a door 2' 10" × 5' 10" with the detachable wheels removed

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NEW MGA CHAIRMAN

Mr. Raymond Thompson, of Church Farm, Wittering, Chichester, was unanimously elected Chairman of the MGA Executive Committee at a meeting of that committee following the Annual General Meeting in London, on 24th March.

Mr. Thompson, who was Vice Chairman last year, has a tray farm of about 50,000 sq. ft. He is a former Chairman of the MGA Publicity Committee and has for some years been a member of the MGA Research Committee which forms the link between the Association and the Glasshouse Crops Research Institute.

A full report of the AGM and Annual Luncheon, which was attended by about 130 people, will appear in our next issue.

INTERNATIONAL CONFERENCE —COPENHAGEN

Present indications are that the total MGA party visiting Copenhagen, on the occasion of the 4th International Congress there in July, will number about 45 of which a party of 25 will be travelling together by rail and boat.

The conference takes place from 18th to 26th July, and there is still time for you to join the party if you wish—but make haste please.

NO DUTCH MUSHROOMS

Mr. J. A. Linfield, Managing Director of A. G. Linfield Ltd., Thakeham, Sussex, in a special statement to the MGA Bulletin on the question of the importation of mushrooms from Holland said:—

" Suggestions which have appeared in sections of the Press tending to indicate that Messrs. A. G. Linfield Ltd., have purchased or are intending to purchase imported Dutch mushrooms are entirely untrue. There is not an atom of truth in the suggestion ".

MUSHROOM PUBLICITY BAGS

The sales of mushroom publicity bags are approaching 20,000,000 but the Publicity Committee is anxious to promote a new sales push. To this end all United Kingdom and Eire Grower Members of the MGA will shortly be receiving 500 bags for special distribution.

During the first week in May growers are asked to place one bag in each chip of mushrooms leaving their farms. In this way the sample bags will get into the hands of greengrocers in all parts of the country and a sharp increase in sales is likely. Firms who distribute these bags will be named on the back of each bag.

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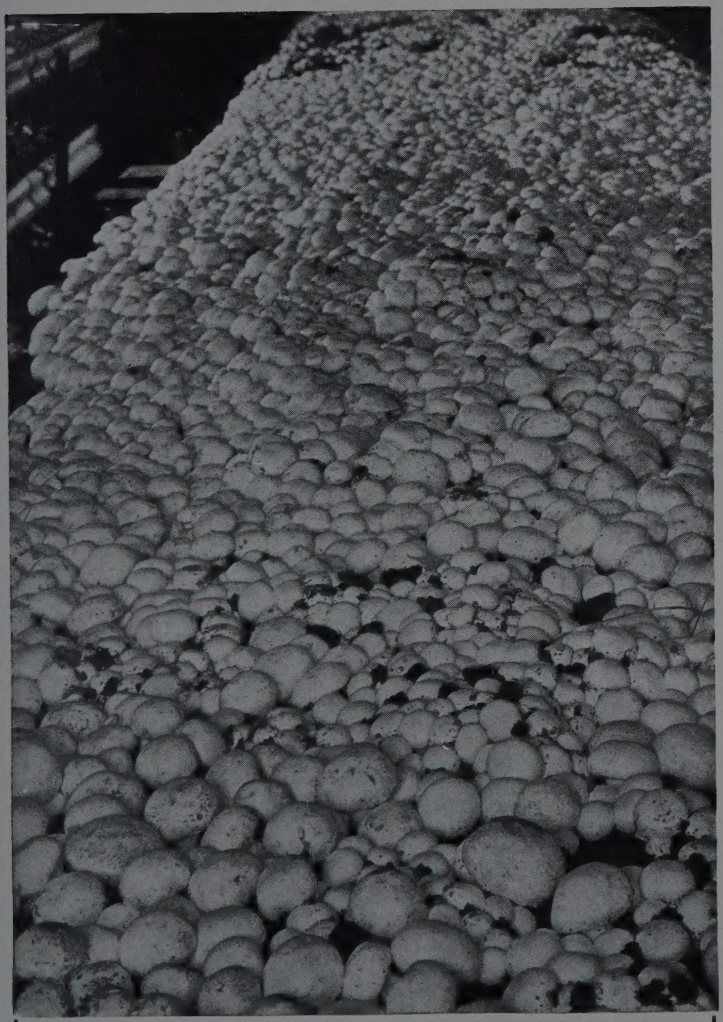

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MUSHROOM BOXES, made by craftsmen and in any size. Enquiries welcomed. N. P. TIMBER CO., 149 Rockingham Road, Kettering, Northants. Phone: 3538 or 5552.

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Published by the Mushroom Growers' Association, Agriculture House, 25-31 Knightsbridge, London S.W.1
and printed by W. S. Maney & Son Ltd., Russell Street, Leeds 1